

Life Systems, Inc.

(69812)

24755 HIGHPOINT ROAD . CLEVELAND, OHIO 44122 . PHONE: 216 464-3291

December 17, 1987
JSH-12-11

Jacobs Engineering Group, Inc.
222 S. Riverside Plaza
Suite 1870
Chicago, IL 60606

Attention: [REDACTED]
Regional Manager

Subject: Project Plan Submittal

- References:
1. Subcontract No. 05-A005-S-87-0006 to Prime Contract No. 68-01-7351, "Technical Enforcement Support for Hazardous Waste Sites (TES IV)"
 2. JEG WA No. 489: Technical Review of Documents for the Sauget Sites; ICAIR WA No. 361462
 3. WA Plan, TR-913-3-36
 4. EPA Primary Contact: Mr. David Favero

Dear Mr. Geers:

The Project Plan for the referenced Work Assignment (WA) is enclosed for your review and approval. This Project Plan is submitted in accordance with the WA, and it revises the work schedule to reflect modifications discussed with the EPA Primary Contact, Mr. Dave Favero.

Life Systems will implement this plan in ten days unless redirection is received from Jacobs Engineering Group prior to that time.

Please forward a copy of the Project Plan to the EPA Technical Contact. If you have any questions or comments, please do not hesitate to contact me at (216) 464-3291.

Very truly yours,

LIFE SYSTEMS, INC.

[REDACTED]
Program Manager

JSH/kjd

Encl.: Project Plan (2 copies)

cc: Project Manager (361462)
Contract Administration (1462)



JACOBS ENGINEERING GROUP INC.
ENVIRONMENTAL SYSTEMS DIVISION

222 S RIVERSIDE PLAZA-SUITE 1870 CHICAGO ILLINOIS 60606

December 23, 1987

Mr. David Favero
U.S. Environmental Protection Agency
230 S. Dearborn Street
Chicago, IL 60604

RE: Contract No. 68-01-7351
Project No. 05-B489-00
Work Assignment No. 489
Sauget Sites
Region V

Dear Mr. Favero:

Please find submitted herewith the Project Plan for the Technical Review of Documents for the Sauget Sites. The purpose of this Project Plan is to present the specific approach, technical effort and schedule proposed for completion of this work assignment.

If you have any questions or require additional information, please feel free to contact [redacted] with ICAIR Life Systems at (216) 464-3291 or myself at (312) 648-0002.

Sincerely,

A handwritten signature in dark ink, appearing to be 'D. G. [redacted]', written over a horizontal line.

[redacted]
Regional Manager

Enclosures

DG/jai

**U.S. ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT AT
HAZARDOUS WASTE SITES**

**TES IV
CONTRACT NO. 68-01-7351
WORK ASSIGNMENT NO. 489**

**PROJECT PLAN
FOR
THE TECHNICAL REVIEW OF DOCUMENTS
FOR
THE SAUGET SITES
EPA REGION V**

**JACOBS ENGINEERING GROUP INC.
PROJECT NUMBER 05-B489-00**

**PREPARED BY:
ICAIR LIFE SYSTEMS**

DECEMBER 1987

DISCLAIMER

This document has not been peer or administratively reviewed within the Environmental Protection Agency and is for internal Agency use and distribution only.

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1.0 INTRODUCTION

This Project Plan describes the technical effort and schedule proposed to complete Work Assignment (WA) 489 under Subcontract Number 05-A005-S-87-0006 to Contract Number 68-01-7351, "Technical Enforcement Support at Hazardous Waste Sites (TES IV)."

This plan is organized into sections describing the purpose, approach, report format, additional technical efforts and project schedule.

2.0 PURPOSE

The purpose of this Project Plan is to present the specific approach, technical effort and schedule proposed for completion of this WA. The Environmental Protection Agency (EPA) Primary Contact (PC) is Mr. Dave Favero.

3.0 APPROACH

The contractor's approach to this WA is designed to provide the EPA with a concise and accurate analysis of the status of the Sauget sites so further response strategies can be effectively planned and implemented.

Background documents will be reviewed and analyzed by a staff hydrogeologist to present a summary of the groundwater monitoring and source material data which will critique previous conclusions and recommendations, identify data gaps in the existing information base and make recommendations for closing those gaps. In order to present the data in its most usable and accessible forms, summary tables, figures and maps will be emphasized.

The following reports will be reviewed in preparation of the summary report:

- Assessment of Groundwater Conditions at the Village of Sauget Treatment Plant Sites. Prepared by Geraghty & Miller, Inc.
- Plant-wide Assessment of Groundwater Conditions at the W. G. Krumrich Plant, Monsanto Company. Prepared by Geraghty & Miller, Inc.
- Groundwater Survey of the Sauget Area, Illinois (in preparation). Contracted by the Illinois EPA.
- Illinois EPA Comments on the Monsanto W. G. Krumrich Plant and Sauget Treatment Plant Sites. Prepared by Harza Environmental Services.

In addition, other pertinent memoranda and reference material provided by the EPA and IEPA will be reviewed and consulted.

4.0 REPORT FORMAT

The major deliverable for this project is a report entitled "Groundwater Monitoring and Source Material Report, Sauget, Illinois." The anticipated outline and list of key figures and tables follows.

4.1 Report Outline

1.0 INTRODUCTION

- 1.1 Purpose
- 1.2 Site Background Information
- 1.3 Nature and Extent of Problem
- 1.4 Chemical Pollutants Identified in Area
- 1.5 Selection of Pollutants of Concern

2.0 HYDROGEOLOGY

2.1 Aquifer Characteristics

2.1.1 Shallow Aquifer

- 2.1.1.1 Geologic Parameters^(a)
- 2.1.1.2 Hydrogeologic Parameters^(b)
- 2.1.1.3 Present and Historic Use

2.1.2 Middle Aquifer

- 2.1.2.1 Geologic Parameters
- 2.1.2.2 Hydrogeologic Parameters
- 2.1.2.3 Present and Historic Use

2.1.3 Deep Aquifer

- 2.1.3.1 Geologic Parameters
- 2.1.3.2 Hydrogeologic Parameters
- 2.1.3.3 Present and Historic Use

2.1.4 Bedrock Aquifer

- 2.1.4.1 Geologic Parameters
- 2.1.4.2 Hydrogeologic Parameters
- 2.1.4.3 Present and Historic Use

(a) The geological parameters subsections will summarize the porosity, permeability, organic constituent, lithology, stratigraphic position and distribution of impervious beds.

(b) The hydrogeological parameters subsections will summarize the seasonal variations in the water table or potentiometer surfaces, flow velocity, recharge, discharge, transmissibility depth and thickness.

- 2.2 Hydrogeologic System
 - 2.2.1 Communication between Aquifers
 - 2.2.2 Influence of Mississippi River
 - 2.2.3 Influence of Pumping Stations
- 3.0 GROUNDWATER SAMPLING AND MONITORING
 - 3.1 Summary of Sampling and Monitoring Programs
 - 3.1.1 State/Federal Agency Programs
 - 3.1.2 Contractor Programs
 - 3.1.3 Summary of Conclusions and Recommendations
 - 3.2 Distribution and Concentration of Pollutants
 - 3.2.1 Present Distribution and Concentration of Pollutants
 - 3.2.2 Migration of Pollutants^(a)
 - 3.2.3 Predicted Near-Term Movement of Pollutants
 - 3.3 Identification of Pollutant Source Areas
 - 3.3.1 Location of Source Areas
 - 3.3.2 Method for Identifying Source Areas
- 4.0 UNCERTAINTIES
 - 4.1 Uncertainties in Hydrogeologic Analysis
 - 4.2 Uncertainties in Monitoring Analysis
 - 4.3 Uncertainties in Source Areas Identification
 - 4.4 Uncertainties Introduced through Lack of Data
- 5.0 CONCLUSIONS
 - 5.1 Aquifer and Groundwater Parameters
 - 5.2 Sampling and Monitoring Results
 - 5.3 Pollutant Source Areas
 - 5.4 Soundness of Conclusions in Reviewed Reports
- 6.0 RECOMMENDATIONS
 - 6.1 Closing data gaps
 - 6.1.1 Location of Additional Monitor Wells
 - 6.1.2 Acquisition of Additional Information
 - 6.2 Remedial Considerations
- 7.0 REFERENCES

(a) Based on historically monitored concentrations.

4.2 List of Figures and Tables

The key figures and tables anticipated for the summary report are as follows:

LIST OF FIGURES

1. Location Map
2. Potentiometric Surface of Shallow Aquifer with Sand/Clay Ratios^(a)
3. Potentiometric Surface of Middle Aquifer with Sand/Clay Ratios
4. Potentiometric Surface of Deep Aquifer with Sand/Clay Ratios
5. Geologic/Hydrogeologic Cross Section of Sauget Area
6. Distribution of VOCs in Shallow Aquifer^(b)
7. Distribution of Extractable Organics in Shallow Aquifer
8. Distribution of Pesticides in Shallow Aquifer
9. Distribution of VOCs in Middle Aquifer
10. Distribution of Extractable Organics in Middle Aquifer
11. Distribution of Pesticides in Middle Aquifer
12. Distribution of VOCs in Deep Aquifer
13. Distribution of Extractable Organics in Deep Aquifer
14. Distribution of Pesticides in Deep Aquifer
15. Mississippi River Stages: Yearly Maximum and Mean Since 1900
- 16-21. Pollutant Concentrations in Wells^(c)

LIST OF TABLES

1. Concentration of Pollutants (maximum and mean values)
2. Physical and Chemical Properties of Pollutants of Concern
3. Hydrogeologic Parameters of Aquifers
4. Monitored Concentration of Pollutants of Concern by Aquifer
5. Estimated Discharge of Pollutants of Concern into Surface Waters

(a) Base map contoured at 20% increments of clay content.

(b) For Maps 6 through 14: subject to availability of data; indicate distribution with time.

(c) Represents at least six key wells in area which have at least four monitor samples.

5.0 ADDITIONAL TECHNICAL EFFORTS

Technical efforts related to enforcement activity will be conducted at the direction of the EPA PC. While the specific tasks are unknown at this time, they are anticipated to consist of:

- Summarization and evaluation of 104 (e) letters to Potentially Responsible Parties (PRPs)
- Field oversight
- Review of documents and submission of reports
- Attendance at project meetings

6.0 PROJECT SCHEDULE

Performance under this WA is scheduled to be completed on September 30, 1988. Milestones established and listed here are the contractor's estimate for completion of individual tasks. Technical direction may alter or change these interim milestones.

<u>No.</u>	<u>Description</u>	<u>Completion Date</u>
1	Receive Groundwater Report from IEPA	12/16/87 ^(a)
2	Submit Project Plan	12/18/87
3	Receive Approval of Project Plan	12/30/87 ^(a)
4	Submit Draft Groundwater Report	02/22/88
5	Receive Review Comments on Groundwater Report	03/14/88 ^(a)
6	Submit Final Groundwater Report	04/01/88
7	Provide Additional Technical Assistance	09/30/88

^(a) This is an EPA/JEG that triggers performance of subsequent tasks. If modification of these milestones should occur, a day-to-day slippage in subsequent milestones is assumed.



JACOBS ENGINEERING GROUP INC.

ENVIRONMENTAL SYSTEMS DIVISION

TES4 105 489-N2 0003

222 S. RIVERSIDE PLAZA - SUITE 1870 CHICAGO, ILLINOIS 60606 (312) 648-0002 FAX (312) 648-0551

June 26, 1988

Mr. Ed Addison
U.S. EPA
230 South Dearborn
Chicago, IL 60604

Re: Contract No. 68-01-7351
Project No. 05-B489-00
Work Assignment No. 489
Sauget Sites - Review of Documents

Dear Mr. Addison:

Please find submitted herewith two (2) copies of the "Groundwater Monitoring a Source Material Report" for the Sauget sites near Sauget, Illinois.

The report provides a detailed review of the hydrogeologic and groundwater pollution studies in the Sauget area. The analysis identifies the parameters most appropriate for characterizing the hydrogeologic system, selected pollutants and probably source areas for contaminants leading to the groundwater.

If you have any questions or require additional information, please feel free to contact either Ron Davenport at (216) 464-3291 or myself at (312) 648-0002.

Sincerely,



Regional Manager

cc: E. Howard

Life Systems, Inc.

TES4 105 489-N2 0003

24755 HIGHPOINT ROAD . CLEVELAND, OHIO 44122 . PHONE: 216 464-3291

July 19, 1988
RJD-7-12

Jacobs Engineering Group Inc.
222 S. Riverside Plaza
Suite 1870
Chicago, IL 60606

Attention: Mr. Dean Geers, Regional Manager

Subject: Work Assignment Report Submittal TR-913-54

References: 1. Subcontract No. 05-A005-S-87-0006 to Prime Contract
No. 68-01-7351, "Technical Enforcement Support at Hazardous
Waste Sites (TES IV)"
2. JEG WA No. 489: Technical Review of Documents for the Sauget
Sites; ICAIR WA No. 361462

Dear Mr. Geers:

Enclosed are three copies of the subject Work Assignment (WA) Report
(TR-913-54), "Groundwater Monitoring and Source Material Report," for your
review.

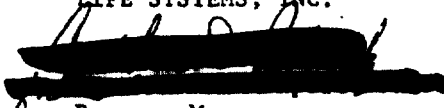
This Report provides a detailed review of the hydrogeologic and groundwater
pollution studies in the Sauget, Illinois area. Our analysis identifies the
parameters most appropriate for characterizing the hydrogeologic system, the
extent of the contaminant plumes for selected pollutants and probable source
areas for contaminant loading to the groundwater. In addition, previous
conclusions and recommendations are critiqued, data gaps in existing
information are identified and procedures for closing data gaps are outlined.

Please forward required copies to the USEPA Primary Contact, Mr. Ed Addison.
This Deliverable fulfills work schedule milestone No. 8 in the WA Plan,
TR-913-3-36A, dated July 6, 1988.

If you have any questions or comments, please do not hesitate to contact me at
(216) 464-3291.

Very truly yours,

LIFE SYSTEMS, INC.


Program Manager

RJD/bam

Encl.: Technical Report, TR-913-54 (3 copies)

cc: J. Lanigan (361462)
R. H. Reuter (1462)
Contract Administration (1462)

RECEIVED
REGION V.

JUL 25 1988